

CLAIMS

1. A novel polypeptide derived from a Notch protein, wherein in a series of proteolytic events of the Notch protein, the polypeptide is released to an extracellular space when NICD (Notch intracellular cytoplasmic domain) translocates to a nucleus as a result of intramembranous endoproteolysis that occurs subsequent to extracellular proteolysis.
2. The polypeptide according to claim 1, which is released to the extracellular space in proportion to Notch signal transduction.
3. The polypeptide according to claim 1 or 2, wherein the release of the polypeptide to the extracellular space results from presenilin-dependent proteolysis.
4. The polypeptide according to any one of claims 1 to 3, which is produced and released as a result of proteolysis (S4 cleavage) of the Notch protein that occurs simultaneously with or either before or after proteolysis at S3, the proteolysis (S4 cleavage) occurring on a N-terminal side with respect to the S3 in a transmembrane domain of the Notch protein
5. The polypeptide according to claim 4, wherein the cleavage site (S4) on the N-terminal side with respect to the S3 is an amino acid residue in the transmembrane domain.
6. A polypeptide comprising an amino acid sequence of at least one of SEQ ID NOS: 1 to 18.
7. A polypeptide comprising an amino acid sequence of at least one of SEQ ID NOS: 1 to 18 in which one or several of amino acids are deleted, substituted, or inserted, wherein the polypeptide is derived from a Notch protein, and in a series of proteolytic events of the Notch protein, the polypeptide is released to an extracellular space when NICD translocates to a nucleus as a result of intramembranous endoproteolysis that occurs subsequent to extracellular proteolysis.
8. The polypeptide according to claim 7, which is released to the

extracellular space in proportion to a Notch signal.

9. The polypeptide according to claim 7 or 8, wherein the release of the polypeptide to the extracellular space results from presenilin-dependent proteolysis.

10. A biomarker comprising the polypeptide according to any one of claims 1 to 9.

11. The biomarker according to claim 10 for detecting at least one selected from the group consisting of Notch signal transduction, cell differentiation, tumor, apoptosis, and Alzheimer's disease.

12. An antibody that can recognize the polypeptide according to any one of claims 1 to 9.

13. The antibody according to claim 12, which is a monoclonal antibody or a polyclonal antibody.

14. A reagent for detecting at least one selected from the group consisting of Notch signal transduction, cell differentiation, tumor, apoptosis, and Alzheimer's disease, which comprises the antibody according to claim 12 or 13.

15. A gene encoding the polypeptide according to any one of claims 1 to 9.

16. The gene according to claim 15, which is DNA or RNA.

17. A vector comprising the gene according to claim 15 or 16.

18. A transformant transformed with the vector according to claim 17.